AMENDMENTS TO THE CLAIMS:

1.(cancelled)

2.(previously presented): A receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving a transmitted signal that is the result of adding a guard interval onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

a delay profile measurement unit for measuring a delay profile of a delayed wave having a delay greater than a guard interval of a data symbol;

an intersymbol interference (ISI) replica generator for detecting a delay-time portion, which is greater than the guard interval, from the delay profile as an ISI portion, and generating an ISI replica conforming to this ISI portion;

a subtractor for subtracting the ISI replica from a receive signal; and

a data demodulator for demodulating data by applying FFT processing to the output of the subtractor.

3.(original): The apparatus according to claim 2, wherein said ISI replica generator generates, as the ISI replica, a time-waveform portion of a known symbol conforming to the ISI portion, or a time-waveform portion of the preceding symbol.

4.(previously presented): A receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving a transmitted signal that is the result of adding a guard interval onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

a delay profile measurement unit for measuring a delay profile of a delayed wave having a delay greater than a guard interval of a data symbol;

an intersymbol interference (ISI) replica generator for detecting a delay-time portion, which is greater than the guard interval, from the delay profile as an ISI portion, and generating an ISI replica conforming to this ISI portion;

a subtractor for subtracting the ISI replica from a receive signal;

means for applying FFT processing to the output of said subtractor and applying IFFT processing to result of demodulation after channel compensation, thereby generating a demodulated-signal restoration replica;

means for inserting the restoration replica into the portion of said subtractor output from which the ISI replica was removed by subtraction; and

a data demodulator for demodulating data by applying FFT processing to a signal that is the result of insertion of the restoration replica.

5.(original): The apparatus according to claim 4, wherein said ISI replica generator generates, as the ISI replica, a time-waveform portion of a known symbol conforming to the ISI portion, or a time-waveform portion of the preceding symbol.

6.(previously presented): The apparatus according to claim 2, further comprising first and second channel compensators;

wherein said delay profile measurement unit performs an autocorrelation operation between a time waveform of a receive signal and a time waveform of a known symbol, measures the delay profile and outputs a channel estimation value;

said first channel compensator applies channel compensation to the ISI replica using the channel estimation value and inputs the result to said subtractor; and

said second channel compensator converts the channel estimation value to a carrier-by-carrier estimation value and applies channel compensation to the result of FFT processing using this channel estimation value.

7.(previously presented): The apparatus according to claim 2, wherein said delay profile measurement unit generates a time-waveform signal of a receive signal by applying IFFT processing to result of the FFT processing, performs an autocorrelation operation between the time waveform and a time waveform of a known symbol, measures the delay profile and outputs a channel estimation value.

8.(original): The apparatus according to claim 6, further comprising an

interpolator for interpolating the delay profile and channel estimation value between known symbols;

ISI replica generation and channel compensation control being performed using the interpolated delay profile and channel estimation value.

9.(original): The apparatus according to claim 4, further comprising the following when said apparatus has been adapted for antenna diversity:

means for detecting degree of influence of an ISI portion in each of multiple branches and deciding a branch for which the degree of influence of the ISI portion is small; and

means for selecting a demodulated-signal restoration replica of the branch for which the degree of influence of the ISI portion is small;

each branch using the demodulated-signal restoration replica that has been selected.

10.(original): The apparatus according to claim 4, wherein said means for generating the demodulated-signal restoration replica has a hard decision unit for rendering a hard decision of a symbol with respect to result of channel compensation on a per-carrier-frequency basis;

said means for generating the demodulated-signal restoration replica applying FFT processing to the output of said subtractor, applying channel compensation to result of FFT processing, rendering a hard decision of a symbol with respect to result of channel compensation on a per-carrier-frequency basis, and applying IFFT processing to result of the hard decision on a per-carrier-frequency basis, thereby generating the demodulated-signal restoration replica.

11.(original): The apparatus according to claim 4, wherein said means for generating the demodulated-signal restoration replica has means for performing monitoring to determine whether magnitude of delayed-wave power to be removed satisfies a threshold value;

said means for generating the demodulated-signal restoration replica

selecting result of channel compensation if the threshold value is satisfied, selecting result of hard-decision processing if the threshold value is not satisfied, and applying IFFT processing to the selected result, thereby generating the demodulated-signal restoration replica.

12.(original): The apparatus according to claim 4, wherein said means for generating the demodulated-signal restoration replica has a limiter for applying limiting in such a manner that result of channel compensation subcarrier-by-subcarrier will not exceed a limit value;

said means for generating the demodulated-signal restoration replica applying FFT processing to the output of said subtractor, applying channel compensation to result of FFT processing, applying limiting in such a manner that result of channel compensation subcarrier-by-subcarrier will not exceed the limit value, and applying IFFT processing to result of limiting, thereby generating the demodulated-signal restoration replica.

13.(original): The apparatus according to claim 4, further comprising:

a removal unit for removing the ISI portion from a known signal; and

means for applying FFT processing to an output signal from said removal unit, thereby calculating an ICI fluctuation value on a per-carrier basis, and finding an inverse performance of this ICI fluctuation value on a per-carrier basis;

said means for generating the demodulated-signal restoration replica applying FFT processing to the output of said subtractor, applying channel compensation to result of FFT processing, multiplying result of channel compensation by the inverse performance of every carrier and applying IFFT processing to result of multiplication for every carrier frequency, thereby generating the demodulated-signal restoration replica.

14.(original): The apparatus according to claim 4, wherein said means for generating the demodulated-signal restoration replica has a soft decision unit for rendering a soft decision of a symbol with respect to result of channel compensation on

a per-carrier-frequency basis;

said means for generating the demodulated-signal restoration replica applying FFT processing to the output of said subtractor, applying channel compensation to result of FFT processing, rendering a soft decision of a symbol with respect to result of channel compensation on a per-carrier-frequency basis, and applying IFFT processing to result of the soft decision on a per-carrier-frequency basis, thereby generating the demodulated-signal restoration replica.

15.(previously presented): A diversity receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving a transmitted signal that is the result of adding a guard interval onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising the following in each of multiple branches:

a delay profile measurement unit for measuring a delay profile of a delayed wave having a delay greater than a guard interval of a data symbol; and

an intersymbol interference (ISI) replica generator for detecting a delay-time portion, which is greater than the guard interval, from the delay profile as an ISI portion, and generating a time-waveform portion of a preceding symbol, which conforms to this ISI portion, as an ISI replica;

a subtractor for subtracting the ISI replica from a receive signal;

FFT/channel compensation means for applying FFT processing to the output of said subtractor and performing channel compensation;

means for inserting a demodulated-signal restoration replica, which is output from restoration replica generating means, into the portion of said subtractor output from which the ISI replica was removed by subtraction;

a data demodulator for demodulating data by applying FFT processing to a signal that is the result of insertion of the restoration replica;

said restoration replica generating means for maximum-ratio combining or selecting and combining, carrier by carrier, a signal output from said FFT/channel compensation means of each branch, and applying IFFT processing to the combined signal of each branch to thereby generate the restoration replica; and

a selector/combiner for maximum-ratio combining or selecting and combining, carrier by carrier, a demodulated signal from said data demodulator of each branch, and outputting the combined signal.

16.(previously presented): A receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving a transmitted signal that is the result of adding a guard interval onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

a delay profile measurement unit for measuring a delay profile of a delayed wave having a delay greater than a guard interval of a data symbol;

an intersymbol interference (ISI) replica generator for detecting a delay-time portion, which is greater than the guard interval, from the delay profile as an ISI portion, and generating an ISI replica conforming to this ISI portion;

a subtractor for subtracting the ISI replica from a receive signal;

zero insertion means for inserting zero into the ISI portion of the output of said subtractor;

means for applying FFT processing to the output of said subtractor and applying IFFT processing to result of demodulation after channel compensation, thereby generating a demodulated-signal restoration replica;

means for adding the restoration replica to the ISI portion of a signal, which is output from said zero insertion means, into which zero was inserted; and

a data demodulator for demodulating data by applying FFT processing to a signal that is the result of addition of the restoration replica.

17.(original): The apparatus according to claim 16, wherein said ISI replica generator generates, as the ISI replica, a time-waveform portion of a known symbol conforming to the ISI portion, or a time-waveform portion of the preceding symbol.

18.(original): The apparatus according to claim 16, further comprising, in multiple stages:

means for generating a restoration replica by applying the IFFT processing;

means for adding the restoration replica to the ISI portion into which zero was inserted by said zero insertion means; and

means for applying FFT processing to a signal that is the result of addition of the restoration replica.

19.(previously presented): The apparatus according to claim 2, wherein the above-described processing is applied to a signal that has been transmitted upon making the length of a guard interval added onto a known symbol greater than the length of a guard interval added onto a data symbol.

20.(previously presented): A receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving and demodulating a transmitted signal that is the result of adding a guard interval of a prescribed length onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

an arithmetic unit for calculating correlation between the received signal and a known signal;

means for detecting, using a correlated value greater than a threshold value, whether a delayed wave greater than the length of the guard interval has occurred;

means for making "0" a correlation value that is equal to or less than the threshold value and outputting a delay profile if a delayed wave greater than the length of the guard interval has occurred;

an ISI replica generator for detecting, from the delay profile, a delay-time portion greater than the length of the guard interval as an intersymbol interference (ISI) portion, and generating an ISI replica conforming to this ISI portion;

a subtractor for subtracting the ISI replica from the received signal; and

a data demodulator for demodulating data by applying FFT processing to the output of the subtractor.

21.(previously presented): A receiving apparatus in an Orthogonal Frequency

Division Multiplexing (OFDM) transmission system for receiving and demodulating a transmitted signal that is the result of adding a guard interval of a prescribed length onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

an arithmetic unit for calculating correlation between the received signal and a known signal;

means for detecting, using a correlated value greater than a threshold value, whether a delayed wave greater than the length of the guard interval has occurred;

means for making "0" a correlation value that is equal to or less than the threshold value and outputting a delay profile if a delayed wave greater than the length of the guard interval has occurred;

an ISI replica generator for detecting, from the delay profile, a delay-time portion greater than the length of the guard interval as an intersymbol interference (ISI) portion, and generating an ISI replica conforming to this ISI portion;

a subtractor for subtracting the ISI replica from the received signal;

means for applying FFT processing to the output of said subtractor and applying IFFT processing to result of demodulation after the channel compensation, thereby generating a demodulated-signal restoration replica;

means for inserting the restoration replica into the portion of said subtractor output from which the ISI replica was removed by subtraction; and

a data demodulator for demodulating data by applying FFT processing to a signal that is the result of insertion of the restoration replica.

22.(previously presented): A receiving apparatus in an Orthogonal Frequency Division Multiplexing (OFDM) transmission system for receiving and demodulating a transmitted signal that is the result of adding a guard interval of a prescribed length onto a signal obtained by inverse fast Fourier transform (IFFT) processing and then transmitting the signal, said apparatus comprising:

means for calculating correlation between the received signal and a known signal and outputting a delay profile;

a waveform shaper for detecting, from the delay profile, a delay-time portion

greater than the length of the guard interval as an intersymbol interference (ISI) portion, and shaping the waveform of a portion of the received signal that conforms to the ISI portion;

means for applying FFT processing and channel compensation to the output signal of said waveform shaper and applying IFFT processing to the signal after the channel compensation to thereby generate a demodulated-signal restoration replica;

means for adding the demodulated-signal restoration replica to the received signal; and

a data demodulator for demodulating data by applying FFT processing to a signal that is the result of addition of the demodulated-signal restoration replica.

23.(original): The apparatus according to claim 22, wherein said waveform shaper makes zero the portion of the received signal conforming to the ISI portion.

24.(original): The apparatus according to claim 22, wherein said waveform shaper multiplies the portion of the received signal conforming to the ISI portion by a predetermined window function.